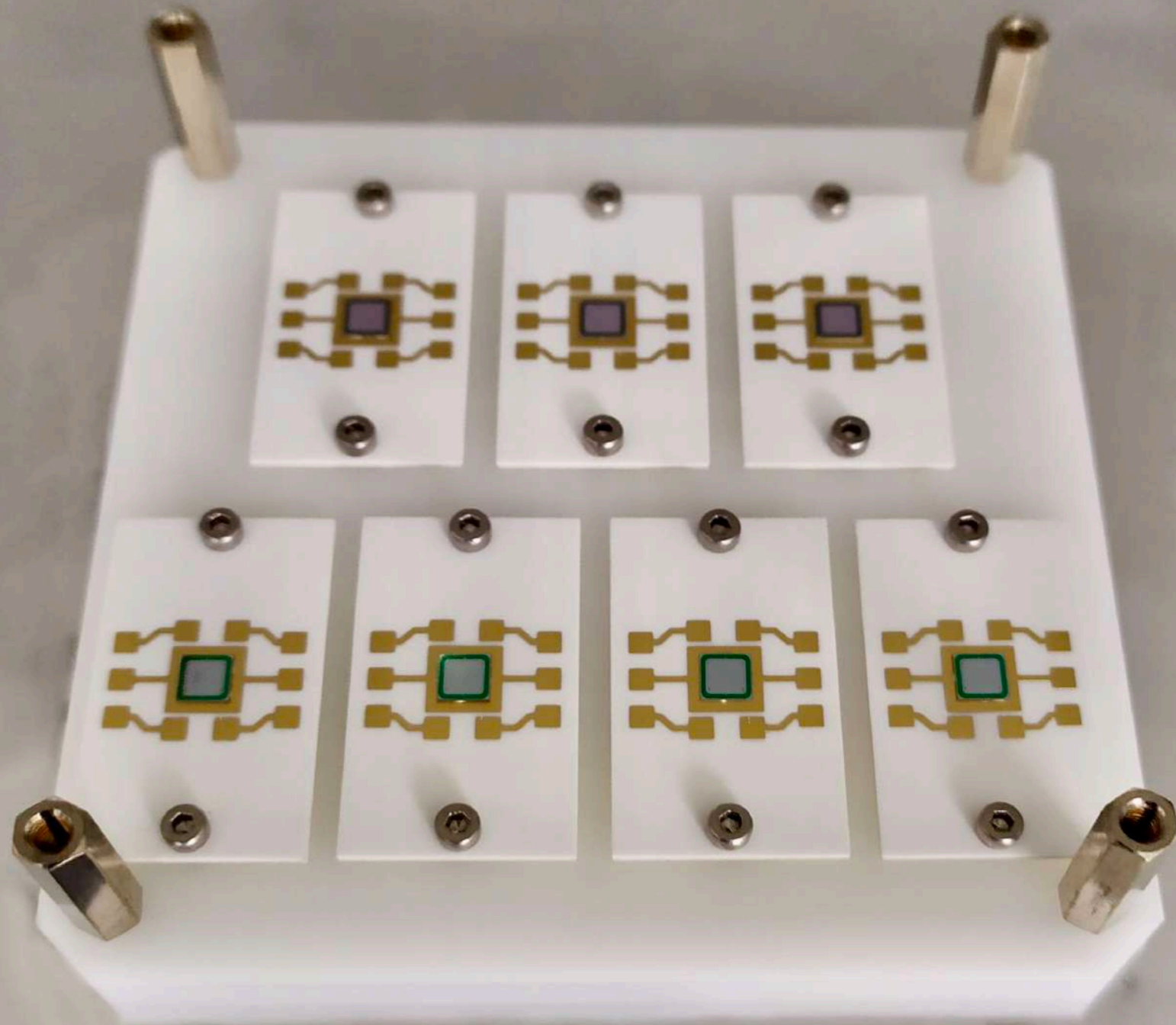


UHV BEAM INTENSITY & POSITION MONITORS



**The photons you loss
at least count**

Ultra High Vacuum (UHV) compatible Silicon transmission photodiode with very low absorption $< 15\%$ at 8 keV and very high efficiency.

Overview

Alibava **UHV X-Ray Beam Intensity and Position Monitors** is a small, easy to install and passive photodiode circuit for X-ray beam diagnostic in UHV environments. This solution provides actual X-ray beam intensity and position data through direct measurement. Furthermore, its transmission properties allows the online monitoring of the most critical beam parameter simultaneously with the data acquisition during an experiment and all that in a UHV environment.

This valuable characteristic is achieved through its innovative thin detector with a very high X-ray transmission, good responsively, uniformity, stable, low absorption and uniform radiation stability.

This UHV X-Ray Beam Intensity and Position Monitors was especially developed for UHV environments based on UHV compatible materials with very low outgoing rates. Each device is supply with an outgassing test report. These features make the UHV Beam Intensity Monitor ideal to be installed on the optical elements of the beam line as can be monochromators and mirrors as well as in high demanding vacuum experimental environments.

02 Features & Electronic Characterization

Features

- P-on-N silicon detector
- Size: 4.4x4.4 mm²
- Thickness: 10 μm
- No external voltage needed
- Easily mounted in experiment
- The beam intensity is measured by output current

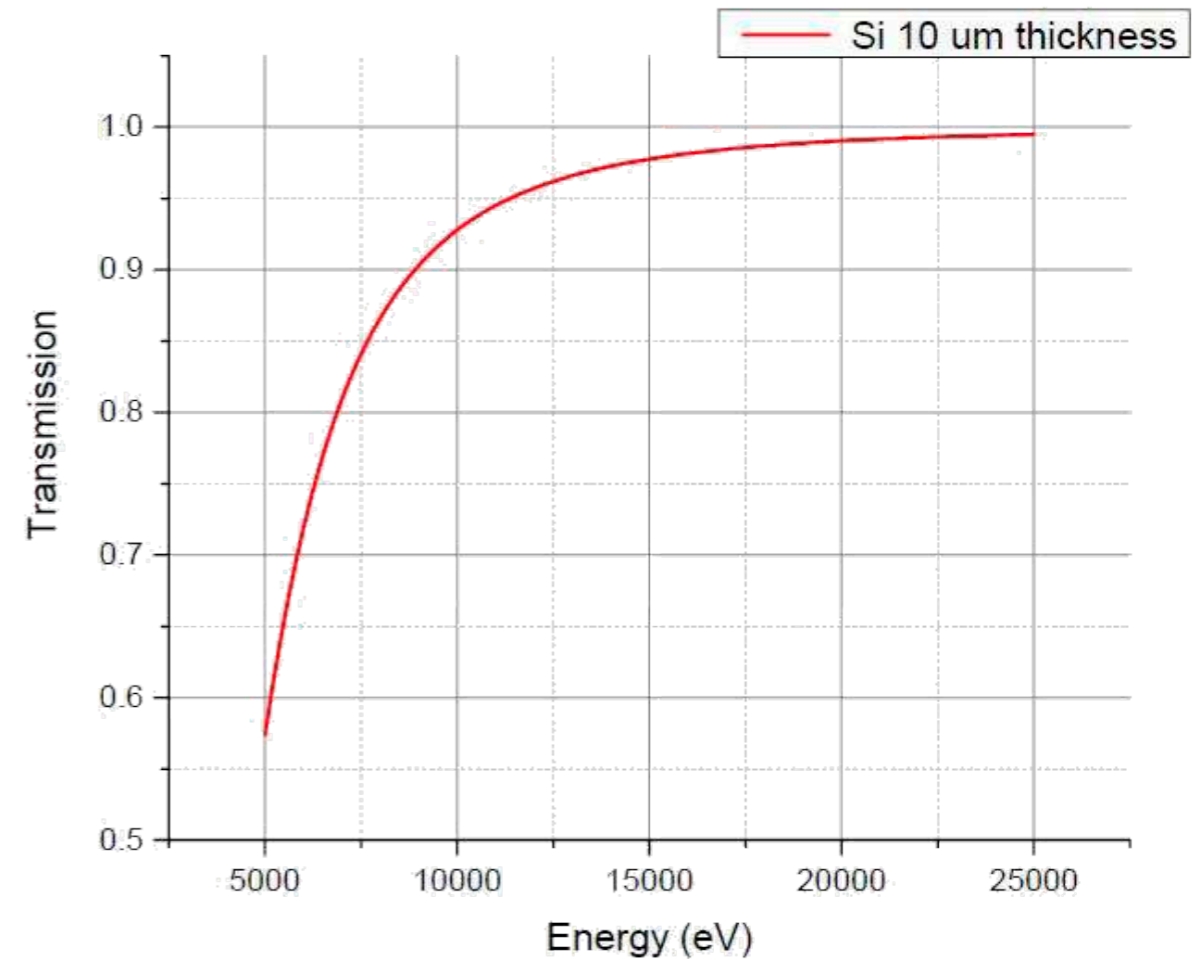
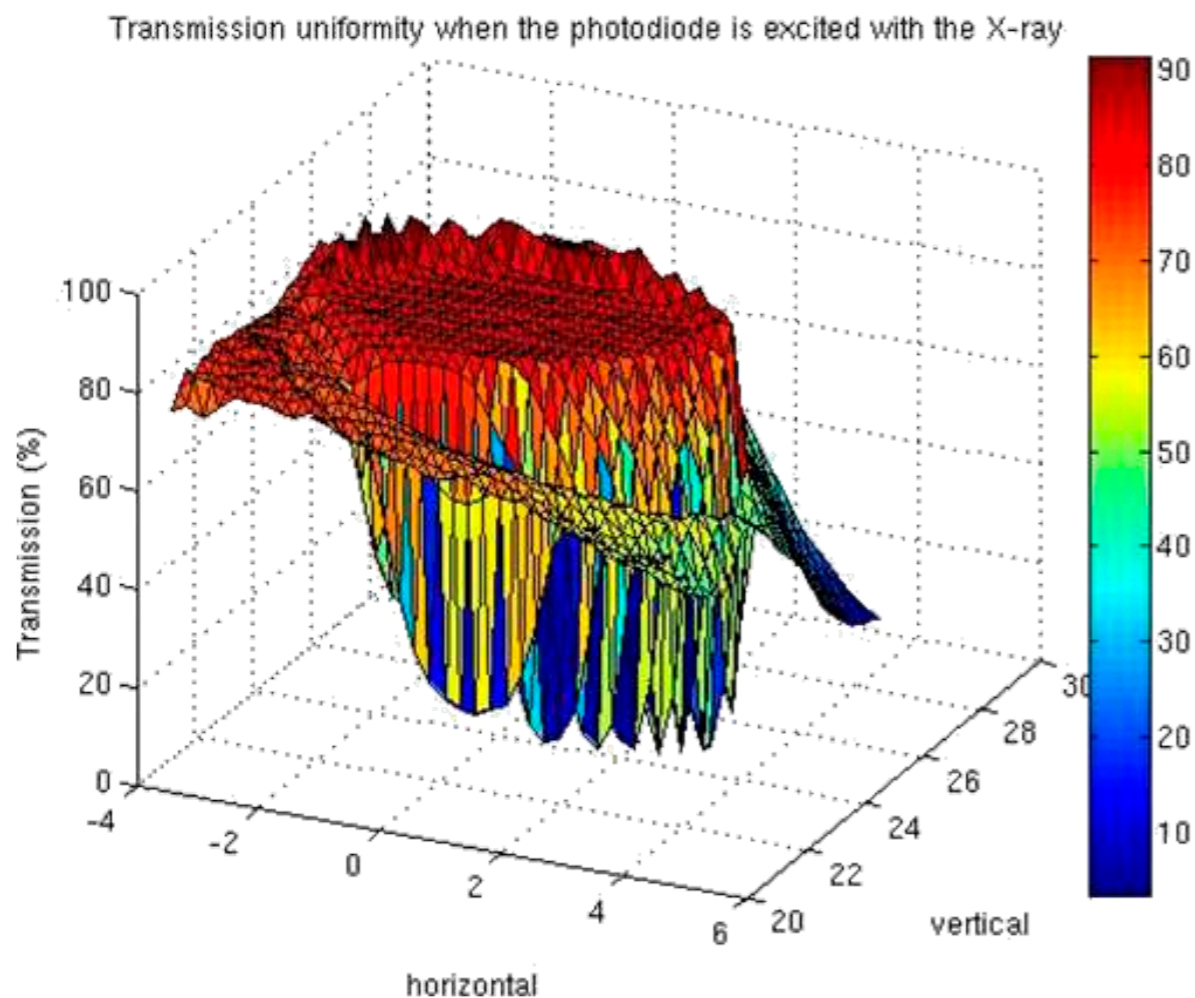


Electronic Characterization

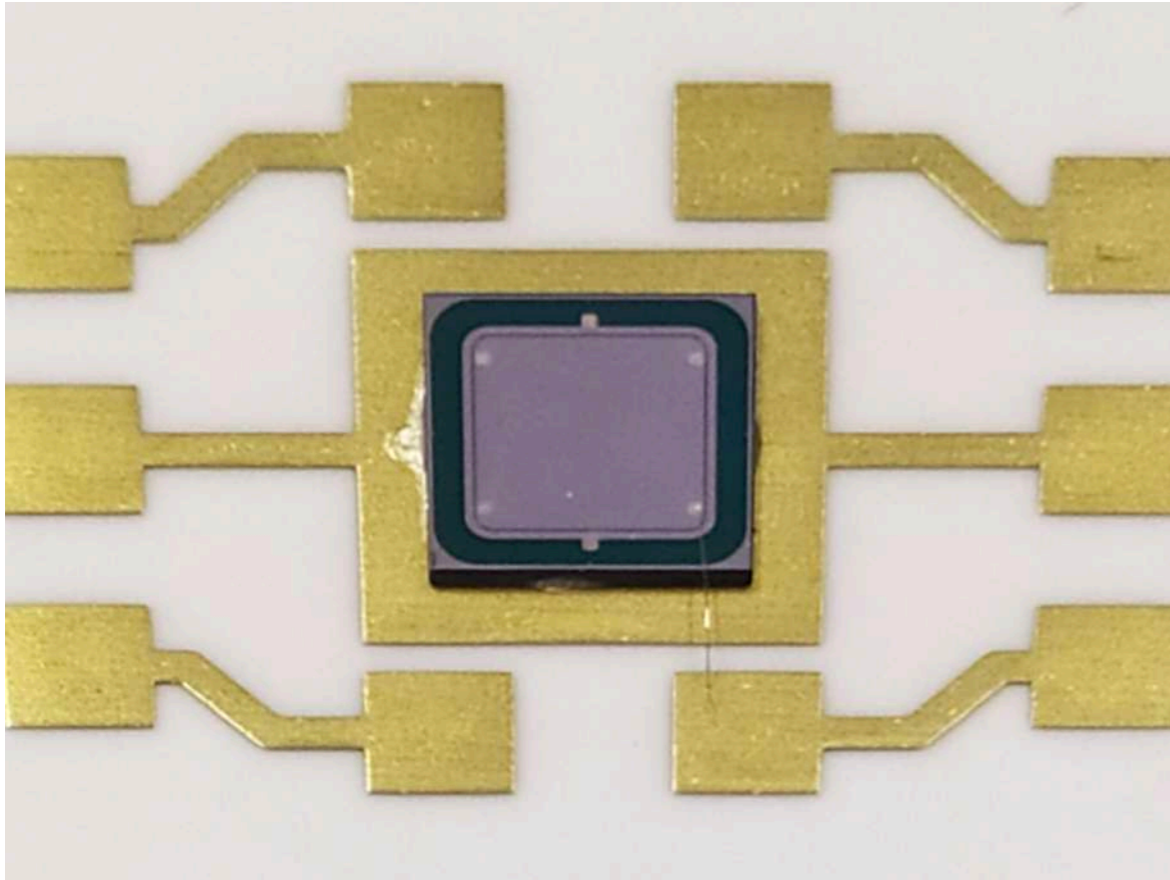
Model No.	Active area (mm ²)	Breakdown Voltage ⁽¹⁾ (V)	Dark Current ⁽²⁾ (pA)	Capacitance C ⁽²⁾ (nF)	Shunt Resistance (MΩ)	Sensitivity S ⁽³⁾ (A/W)	Max Storage T ^e (°C)
Beam Intensity AS04-104H 4.4x4.4mm ²	19.36	14,6	0.13	0,123	420	0.035	80
Intensity and Position AS04-404H 4.4x4.4mm ²	19.36	14,6	0.13	0,123	420	0.035	80

03 Transmission Properties

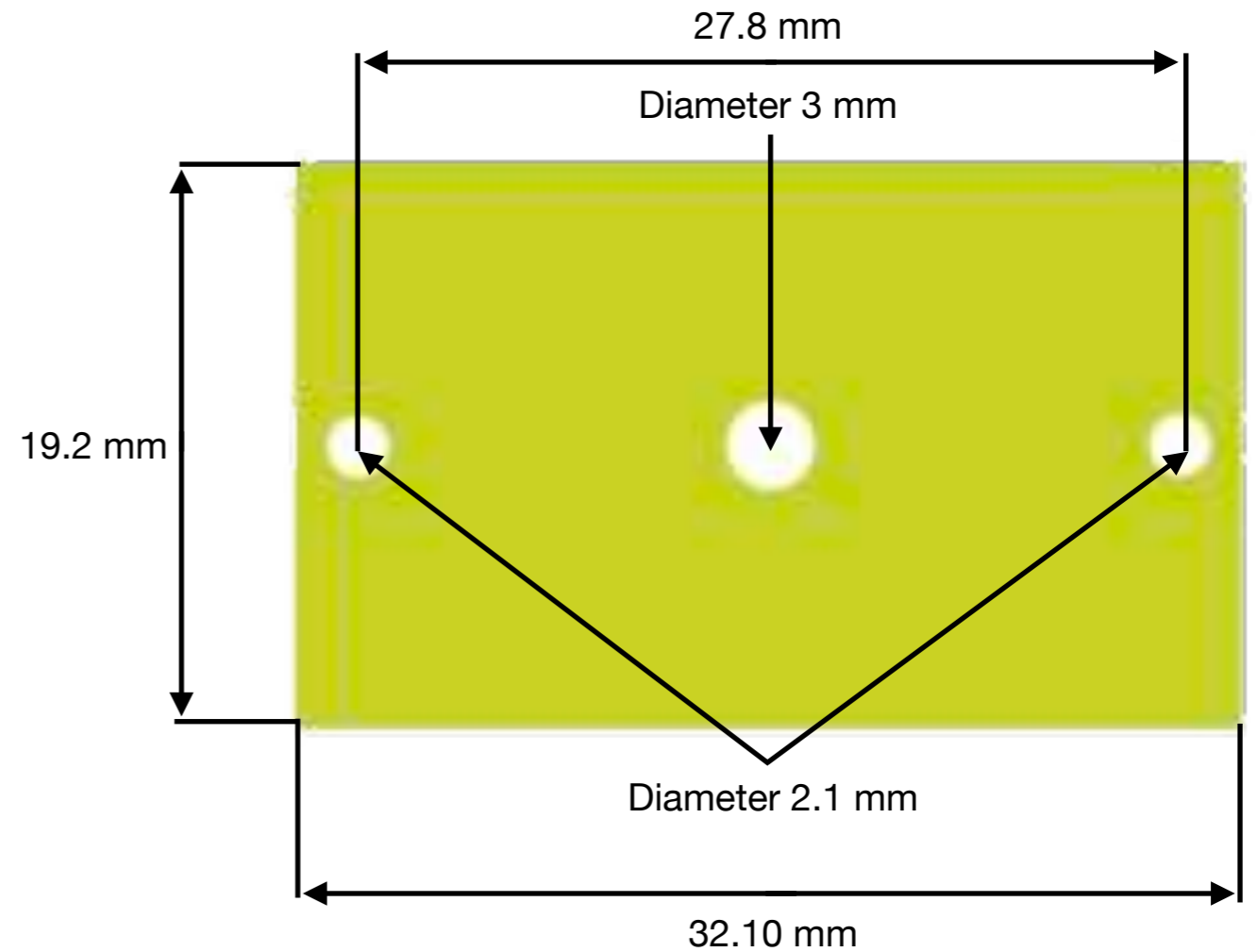
- Wide energy range
- Transmission level above 80% at 8keV and 94% at 12keV
- Responsivity uniformity better than 5% inside the active area



Diode Detail



Printed Circuit Board*



*Diode is not shown

Developed in collaboration with ALBA Synchrotron.

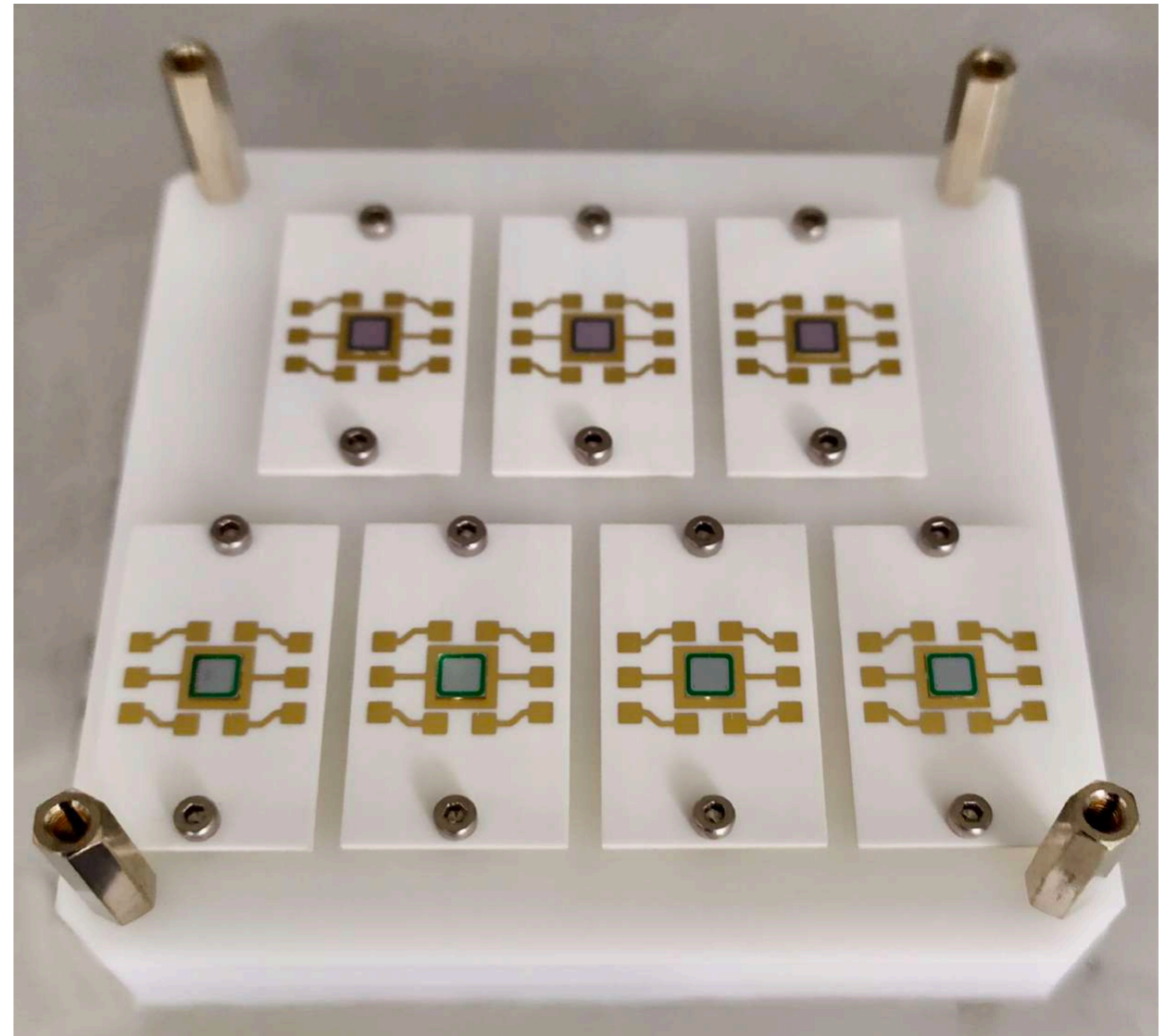


This product is sold under license of Spanish National Research Council (CSIC).

Users of UHV Beam Intensity & Position Monitors

Alibaba Systems have supplied the Brazilian Center for Research in Energy and Materials (CNPEM) with six **UHV Beam Intensity** for the Sirius Synchrotron.

These diodes, specifically developed for UHV environments show very low degassing levels. The small thickness of these silicon transmission diodes is only 10 microns, providing a minimal absorption for medium energies.



Brazilian Synchrotron
Light Laboratory



CNPEM

**Want To Learn
More?**

For more information about the **UHV Beam Intensity & Position Monitors** please contact us:



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